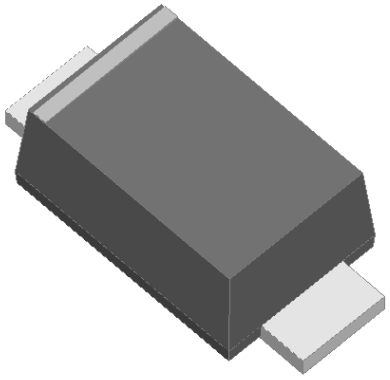
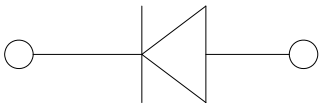
Surface Mount Super Fast Recovery Rectifier





Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Super fast switching for high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in super fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer and telecommunication.

Mechanical Date

- **Package**: SOD-123FL
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■Maximum Ratings (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	E1JS
Device marking code			E1JS
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	600
Maximum RMS Voltage	V_{RMS}	V	420
Maximum DC blocking Voltage	V_{DC}	V	600
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	I_O	A	1.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	30
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			60
Current squared time @1ms≤t≤8.3ms Tj=25℃, Rating of per diode	I^2t	A^2s	3.735
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	Cj	pF	7
Storage temperature	T_{stg}	℃	-55 ~ +150
Junction temperature	Tj	℃	-55 ~ +150

■Electrical Characteristics (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	E1JS
Maximum instantaneous forward voltage drop per diode	VF	V	IFM=1.0A	1.7
Maximum reverse recovery time	t_{rr}	ns	I_F=0.5A, I_R=1.0A, I_{rr}=0.25A	35
Maximum DC reverse current at rated DC blocking voltage per diode	IR	μA	Tj =25℃	5
			Tj =125℃	100

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	E1JS
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	60
	$R_{\theta J-L}$(1)		20
	$R_{\theta J-C}$(1)		18

Note：

（1）Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm*3mm copper pad areas.

■ Characteristics (Typical)

FIG1:Io-TL Curve

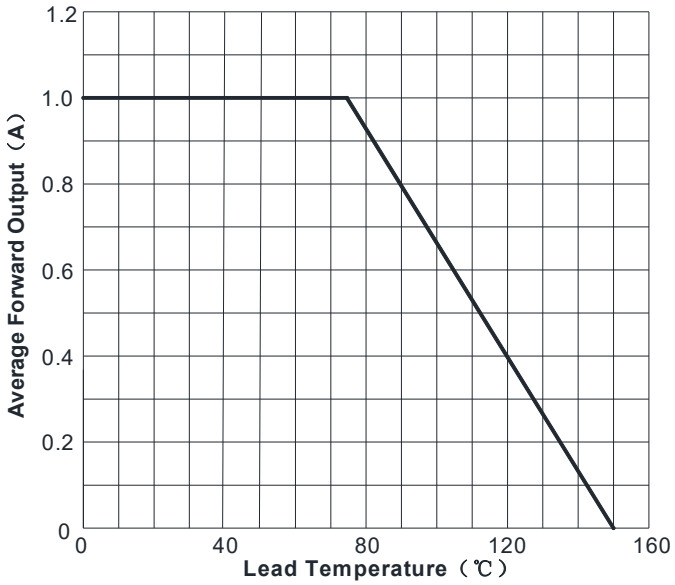


FIG2:Surge Forward Current Capability

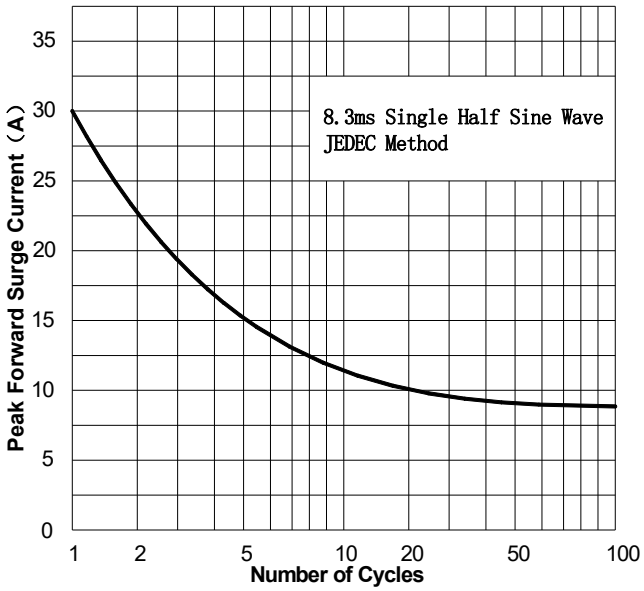


FIG3:Typical Forward Voltage

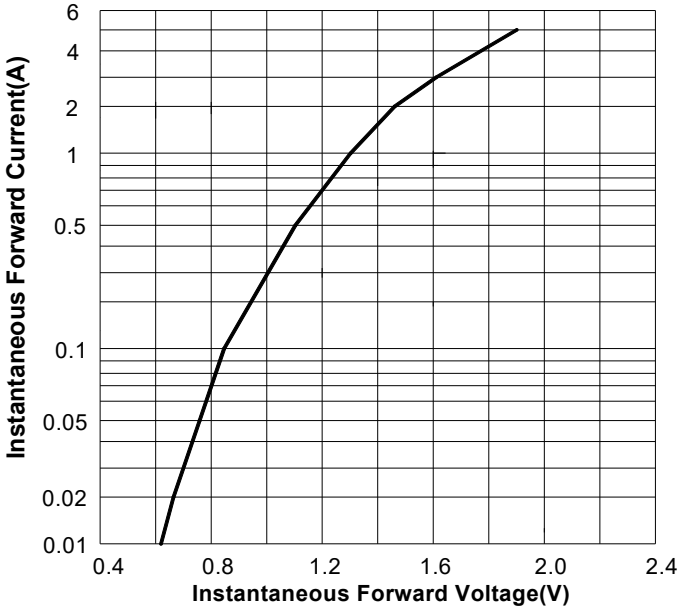


FIG4:Typical Reverse Characteristics

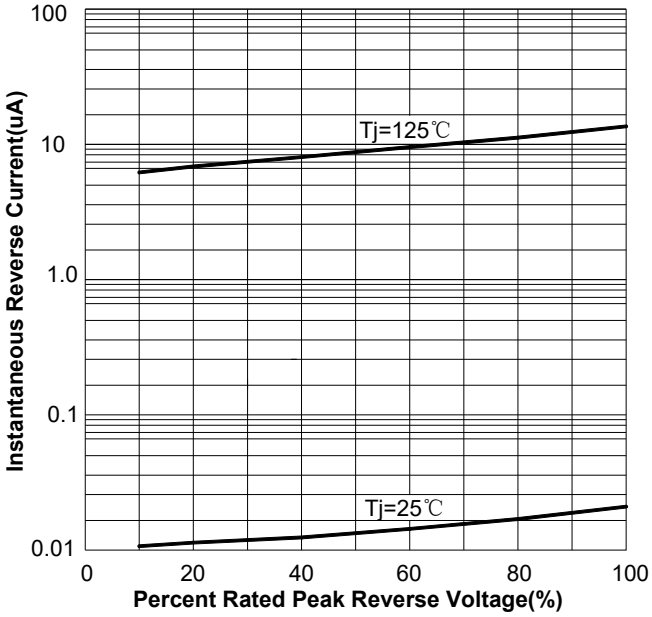
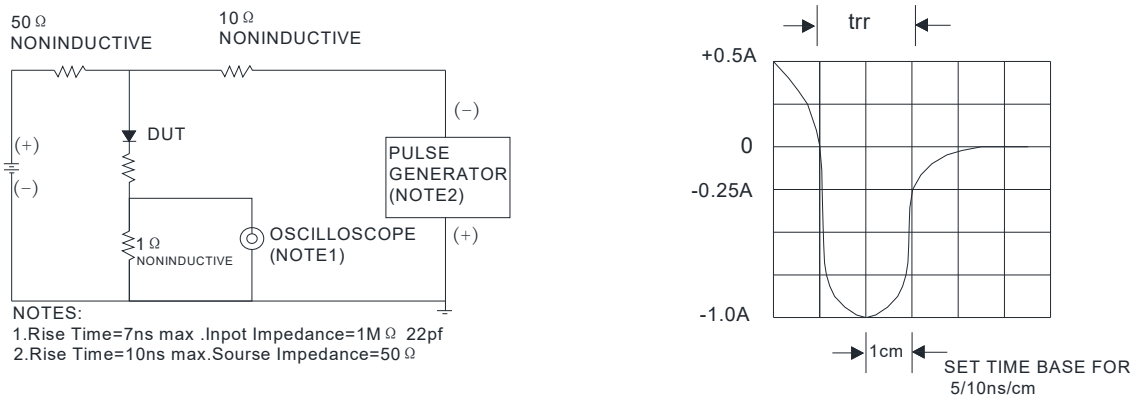


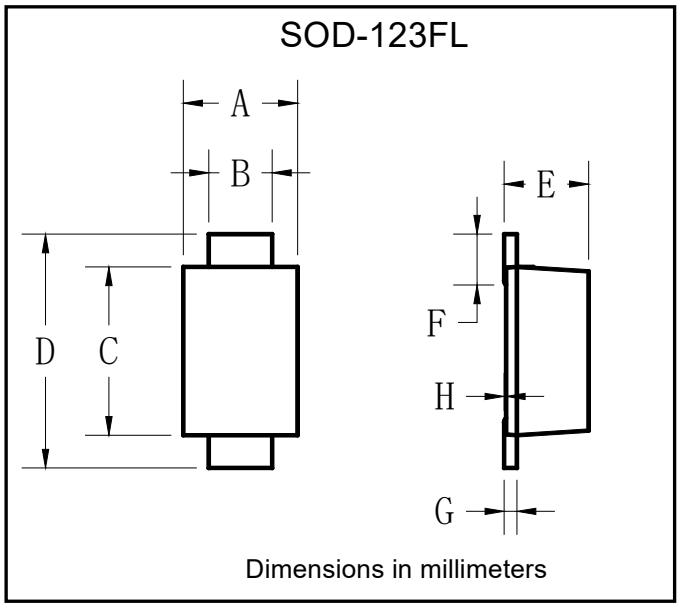
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■Ordering Information (Example)

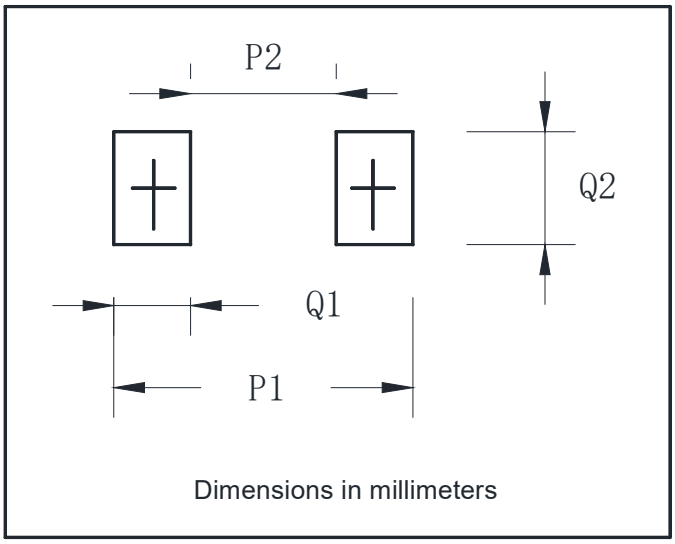
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
E1JS	F1	Approximate 0.0169	3000	15000	120000	7” reel

■ Outline Dimensions



SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	0.00	0.05

■ Suggested pad layout



SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.
Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.